

PICO (TTT) Worksheet: A Guided Exercise In Developing A Sound Clinical Question

Background & Foreground Questions

Many questions arise during patient care. Some are general questions about a clinical problem or a disease process, e.g. “*What is the overall best approach to respiratory distress?*” These are called Background Questions and are best answered by going to an excellent review article or respected evidenced-based textbook. When in need of an overview on clinical presentation of a disease, standard therapies, diagnostic tools, etc., consult a textbook.

Complex clinical questions are best answered by going to the primary or pre-assessed studies in the literature these are called Foreground Questions. These patient-centered problematic questions, involve interpretation and consideration of the risks vs. benefits for a patient or group of like patients. This can be approached efficiently and effectively if you start by first systematically clarifying the question, PICO (TTT), understanding what type of clinical question it is and what type of study design is appropriate before searching the literature. An example of a *foreground question*, “In preterm infants, do multiple doses of surfactant therapy reduce the incidence of chronic lung disease compared to a single-dose of surfactant?” Using the PICO (TTT) acronym will help you organize your query into a searchable foreground question.

PICO (TTT)

Patient/ Problem	Intervention	Comparison/ Control	Outcome/Effects	Time (Optional)	Type of Question	Type of Study Design
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Question Categories: Identify the question type to consider appropriate studies & data sets.

Diagnosis	Diagnostic Test	Harm/Etiology	Prognosis	Prevention/Therapy
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Exercise 1

After careful consideration of the clinical manifestations, you suspect that your patient has a patent ductus arteriosus. In order to confirm a diagnosis you plan to order a test. You know that an echocardiogram has been shown to have the highest sensitivity and specificity. However, a new nurse asks you whether or not it would be beneficial to obtain an EKG because “it is the best first test.” Seeking further evidence you decide to consult the literature and then frame the question.

“In preterm very low birth weight infants with a suspected patent ductus arteriosus, is an EKG a better first test than an echocardiogram to diagnosis a PDA? --A Question of Diagnostic Test

[A background question would be: “What is the differential diagnosis for a patent ductus arteriosus?”]

Patient/ Problem	Intervention	Comparison/ Control	Outcome/ Effects	Time (Optional)	Type of Question	Type of Design
Preterm VLBW PDA	Echocardiogram	EKG	Specificity & Sensitivity		Diagnostic	Prospective Study RCT Meta-analysis

Exercise 2

As a neonatal nurse you have been caring for a preterm infant with a diagnosis of persistent pulmonary hypertension. Your patient continuously desaturates while on 100% FiO₂. The medical team is rounding and you would like to suggest the possibility of using nitric oxide (NO) to decrease pulmonary vascular resistance but you're not sure if that is the best treatment for your patient.

What TYPE of Clinical Question? _____

What TYPE of Study Design? _____

Patient/ Problem	Intervention	Comparison/ Control	Outcome/ Effects	Time (Optional)	Type of Question	Type of Design

Exercise 3

For these exercises try to work together in small groups on either one of the cases below. You will be assigned a case and source to search. After 15 minutes we will review your search history and examine your results. Use the PICO Worksheet to develop your strategy and to indicate your findings.

Case 1

There has been a hospital-wide meeting to discuss the use of fentanyl vs. morphine in treating post-operative pain in preterm infants. Your hospital is recommending morphine. The hospital you use to work at used fentanyl, you must come up with an evidence-based recommendation for what the hospital should use. You are to retrieve the "strongest" evidence from either a primary or evidence-based secondary resource.

In preterm infants, is morphine more effective than fentanyl in treating post-operative pain?

Case 2

You are participating in your NICU's interdisciplinary Developmental Care Committee and one of the residents ask you if infant massage or music therapy is a viable option to use for late preterm infants during a painful procedure? You want to come up with the best evidence to support your answer. You need to develop your PICO (TTT) question before searching the evidence.

In late preterm infants, does infant massage improve oxygen saturation more effectively than music?

Online Worksheet Resources

Sonoma State University

<http://www.sonoma.edu/users/k/koshar/n300/PICOs.html>

Alaska Medical Library

<http://consortiumlibrary.org/aml/researchaids/ebp/>

Multiple sources were used to develop this worksheet. Please see Reference list.